

reference image, the motion vectors being formed for each picture block, the method comprising the steps of:

in a first search step, determining a first motion vector with a pel accuracy;

starting out from the first motion vector, in a second search step, determining a second motion vector with a sub-pel accuracy by an aliasing-reducing interpolation filtering, using a digital filter, a resolution being selected to be higher than that corresponding to a resolution of a pixel raster in the first search step, **more than four neighboring pixels being utilized for an interpolation of each pixel**, to interpolate pixels between a scanning raster for the first search step; and

in a third search step, starting from the second motion vector, determining a third motion vector by a further interpolation filtering using the digital filter, a resolution being increased once more in comparison with the second search step, an interpolation being carried out on the basis of a pixel raster, with a resolution in the second search step.

As noted by the Office Action, the Ziegler reference does not disclose at least "determining a second motion vector with a sub-pel accuracy by an aliasing-reducing interpolation filtering" in which "more than four neighboring pixels being utilized for an interpolation of each pixel." The Office Action cites col. 9, lines 25-55 of the Thomas reference as teaching a "motion vector detecting method comprising aliasing reducing interpolation filtering, and more than four neighboring pixels being utilized for an interpolation of each pixel in order to reduce visual effects of aliasing." However, the interpolation algorithm disclosed by the Thomas reference teaches "**taking a weighted sum of the values of the four nearest pixels**," where "[t]he weights were chosen such that when the point being interpolated coincided with the location of either of the four pixels, the interpolated value was equal to the value of that pixel." (Thomas, col. 9, ll. 44-48, *emphasis added*). Thus, the Thomas reference clearly does not disclose using **more than four neighboring pixels** for an interpolation of each pixel as recited in Claim 6. Since the Ziegler and the Thomas reference do not disclose at least this feature of Claim 6, the Ziegler and the Thomas references do not render Claim 6 or dependent Claims 7-10 and 12 obvious under 35 U.S.C. §103(a). It is, therefore, respectfully requested that this rejection be withdrawn.

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Ziegler reference and the Thomas reference in view of United States Patent No. 5,991,447 to Eifrig et al. ("the Eifrig reference").

Claim 11 depends from Claim 6. As discussed above, the Ziegler and the Thomas references do not disclose at least "determining a second motion vector with a sub-pel accuracy by an aliasing-reducing interpolation filtering," in which "more than four neighboring pixels being utilized for an interpolation of each pixel." The Eifrig reference also fails to disclose these features. Since the Ziegler, Thomas and Eifrig references do not disclose each and every feature of parent Claim 6, these references do not render dependent Claim 11 obvious under 35 U.S.C. §103(a). It is, therefore, respectfully requested that this rejection be withdrawn.

### **CONCLUSION**

In light of the foregoing, Applicant respectfully submits that all of the pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully Submitted,

Dated: 5/29/03

BY *Richard L. Mayer* *by*  
 Richard L. Mayer  
 Reg. No. Reg. No. 22,490  
 KENYON & KENYON  
 CUSTOMER NO. 26646  
*36,197)*